
Features and services

Several system and telephone features are available for use with Meridian Data Services. These features and their operation and/or interaction when used in conjunction with data calls, are defined under subsequent headings.

Refer to the specific data document listed at the beginning of this document or *X11 features and services* (553-3001-305) for more information regarding system and telephone features.

Automatic Dialing

Description This feature allows a station user to dial a directory number by pressing a single key. The user may change the number associated with Autodial at any time. The directory number may include trunk access and area codes.

Interaction This feature, when assigned to a co-located ADM, is accessed from the telephone once the DATA SHIFT key is pressed on the ADM. If also assigned to the companion telephone, the feature will operate independently; i.e., programming and use apply to data (DATA SHIFT lamp steadily lit) or voice (DATA SHIFT lamp dark). The feature can also be accessed from an AIM or from a co-located ADM with keyboard dialing.

Call Forward All Calls

Description A data station with this feature may have all calls which are directed to the DDN automatically forwarded to another data station DDN within the customer group.

Interaction This feature, when assigned to the co-located ADM, is accessed from the SL-1 set once the DATA SHIFT key is pressed on the ADM. If also assigned to the companion telephone, the feature will operate independently, i.e., activation will apply to either ADM (DATA SHIFT lamp steadily lit) or telephone (DATA SHIFT lamp dark).

Call Forward—internal calls

Description This feature adds greater flexibility to the Call Forward (CFW) All Calls feature, enabling a data station to opt to have *only* internal calls automatically forwarded to another data station within the customer group.

Feature operation and requirements adhere to the CFW All Calls feature. However, the forward DN for the Internal CFW feature functions independently of the forward DN for CFW All Calls. Consequently, non-internal calls are not affected by this new feature and will continue to be directed to the CFW DN defined for CFW All Calls.

Limitation The Internal CFW feature does not support data telephones. Therefore, on digital telephones that provide both voice and data communication, Internal CFW supports the voice line only.

Ring Again

Description This feature allows a station user to have the system monitor a busy directory number, and when it becomes free, to alert the calling station and to ring the called station. No digits are outpulsed until the alerted station accepts the call. The user may originate or receive other calls while Ring Again is activated.

Speed Call

Description Speed Calling allows a station user to place calls to a directory number by dialing a 1-, 2-, or 3-digit code. The DN may be for stations, CO trunks or DDD numbers.

Provision Speed call lists of 10, 100, or 1000 entries are assigned to a speed call controller who may use or change any entry in the list at any time. Any number of users may be assigned to any list.

Interaction Combined voice and data entries with the same Speed Call list are not recommended.

User Selectable Call Redirection

Description USCR allows the user to perform two tasks:

- Select the four redirection DNs from the telephone. These DNs include the CFNA DN and the external CFNA DN (if it exists).
- Change the way the number of ringing cycles is defined for Flexible Call Forward No Answer (CFNA). One of three options can now be selected from the telephone.

Limitation This feature does not support Basic Rate Interface (BRI) telephones.

Automatic Set Relocation

Description This feature allows the users to move the data sets to another location without the intervention of an installer. This feature is available with the QMT7 (ADM) and QMT11 (ASIM).

Automatic Route Selection

Description Automatic Route Selection (ARS) provides the system with the ability to complete outgoing calls using the cheapest and most efficient routing available.

Call Detail Recording

Description Call Detail Recording (CDR) is an SL-1 optional software package which provides a record of selected calls for accounting and administration purposes. The CDR call records include the identity of the calling and called parties plus the duration of the call. See *Call Detail Recording description and formats* (553-2631-100) for a full description of this feature.

Interaction Data calls over outgoing trunks (via modem pool) are recorded as one outgoing trunk call (PDN to external data facility) transferred to a DN of a modem. If the same key is used for voice and data, then only one call type may be made at a time. Once a data call is established, then PDN is available to make a voice call.

Hunting—Computer Ports and Modem Pool (See Dataport Hunting)

Description Hunting allows a call directed to a busy DDN to be routed to the next idle DDN in a prearranged group. Of the four types of hunting provided by the Meridian SL-1 system, two types are recommended when used in conjunction with computer port DDN and Modem Pool DDN:

The hunting feature permits data users to access an idle device within a group of computer ports or modem pool ADM/modems by using the DDN.

Provision Hunting is assigned to a stand-alone ADM associated with computer ports or modem pool ADM/modems using LD 11. Data hunt groups must contain like members; i.e., there cannot be a mix of DDNs belonging to computer port ADM and Modem Pool ADM within a single hunt group.

Dataport Hunting

The Dataport Hunting (DPH) feature improves the hunting and ring again operations for modem pooling.

Before this feature was introduced, dataports were defined as stations in the software. To establish a pool of dataports, the stations were connected in a hunt chain. The maximum number of dataports which could be accessed under a single DN were limited by the maximum number of hunt steps for that software generic. If all members in the chain were busy, the calling party could only apply ring again against one station in the chain and might not be notified when the other dataports in the pool became idle.

The Dataport Hunting feature organizes the dataports into ADM trunk type routes and hunts the dataports as trunks.

A maximum of 128 dataports can be grouped under a single access code (with an option to step to another similar ADM route). If all members of a route are busy, the calling party may apply Ring Again and be notified when ever the first route number becomes idle.

A dataport is configured by connecting either

- a modem capable of auto answer to one unit of a 500 line card (QPC60)
or
- a stand-alone ADM in the auto-answer mode to a data unit of a DLC (QPC311).

During day service only, an attendant can transfer incoming calls to dataport groups. During night service, any station can transfer calls to dataport groups.

Provision Modems and stand-alone ADM are assigned to the Dataport Hunting feature with Overlay Programs 16 and 14.

Digital Trunk Interface

DTI (X11 release 5 and later) provides for a trunk interface between a Meridian SL-1 Digital Network Loop and an external DS-1 Digital Carrier Termination.

This provides the capability of an all-digital path for voice and data transmission.

The DTI data channels support the same transmission mode, mode of operation, transmission speeds, and data format as the SADM.

The DTI feature may be used with AMP for Outbound Modem Pooling but is not used for Inbound Modem Pooling.

There are three different trunk types: Data Only, Voice and Data, and Voice Only. If a Data Only outgoing trunk is found, a modem is not necessary. However, a modem is inserted when either of the other two trunk types are used.

Provision LD 11 is used to designate the all-digital connection flag in the customer data block, while overlay programs 17, 73, 16, and 14 are used to establish the DTI feature. The prefix DN is defined in Overlay Program 16.

Computer/PBX Interface (CPI)

CPI provides a 24-channel T1 carrier link between the Meridian SL-1 and a host computer. CPI uses the DTI hardware connected to a host computer to provide data channels from the SL-1 to the host. CPI allows manufacturers to build the interface into their computers.

CPI eliminates the need for DLC, ADM, or MCDS and allows switched access to a large number of host computer ports (max 24 per CPI) via one interface.

CPI provides the capability of an all-digital path for data transmission to the host with the flexibility of supporting every asynchronous and synchronous protocol. (See *X11 features and services* (553-3001-305) for a full description of this feature).

The CPI data channels support the same transmission mode, mode of operation, transmission speeds, and data format as the SADM.

Remote Peripheral Equipment

Description Remote Peripheral Equipment (RPE) allows the range of the multiplexed loop between the common and peripheral equipment to be extended beyond 50 ft (15 m). The peripheral equipment may then be placed closer to the stations it serves and effectively increases the serving area of the Meridian 1.

Outbound Modem Pooling (not AMP)

Description This configuration allows non dedicated, dial-up access to voice-grade modems required for outgoing data calls to remote facilities over analog trunks.

Each pooled modem consists of an odd-numbered port on a DLC connected to a stand-alone ADM. The DLC port is assigned a DDN. The ADM is in turn connected to a voice-grade modem. The modem is connected to a Line Card (Modem Pool or regular) in the Meridian 1 PE.

Note: With the AMP feature, the regular QPC60 line card is always used to establish a pooled modem. AMP in connection with the Dataport Hunting feature is able to determine the ringing requirements. There is also no need for the VFDN reference required with Manual Modem Pooling.

The MPLC supports up to four ADMs. An MPLC (QPC353) port is required for each asynchronous modem in an asynchronous modem pool. The MPLC is assigned a VFDN which corresponds to the VFDN switch setting in the ADM. This number is used to establish the outgoing call connection on the analog side (to analog trunk) of the modem.

A regular line card (QPC60) supports up to four synchronous modems in a synchronous outgoing modem pool.

To access the modem pool, a data station dials the DDN assigned to the ADM.

When a modem pool consists of more than one stand-alone ADM/modem pair, the hunting feature is used to provide users efficient modem pool access through use of one pilot modem pool DDN (see [“Hunting—Computer Ports and Modem Pool \(See Dataport Hunting\)” on page 44](#)).

The Ring Again queuing feature can also be applied by data callers who encounter a busy modem pool at the time of dialing (see “Ring Again” on page 42).

Provision The DDN and hunt group of the ADM/modem pair are entered in the office data using LD 11.

Declaration of the VFDN is made in the office data using Overlay Program 10.

The number of pooled modems to be supplied is determined according to customer utilization requirements, calculated by using *Meridian data features traffic engineering and configuration* (553-2731-151). Modem pools must be organized according to types and transmission modes (no mixing is allowed).

Limitations Data calls placed through the modem pool over unconditioned voice-grade lines are limited to a maximum transmission rate determined by the modem capability or by the limitations of the unconditioned line.

Inbound Modem Pooling

Description This feature is only applicable to the QMT8 and higher numbered ADM.

Each pooled modem consists of a QPC60 connected to a modem. The modem is in turn connected to a stand-alone ADM. The ADM is connected to a DLC in the SL-1 PE.

An inbound modem pool is a group of modems configured in a pool to permit remote terminals to access local computer ports (or terminals) over a voice-grade network. Both asynchronous and synchronous modems are supported for access to single hosts. However, only asynchronous modems are supported for access to multiple hosts. The Inbound Modem Pool is separate from the Outbound Modem Pool. The dialing procedures are different for access to a single host (via Hotline) versus access to multiple hosts.

Note: With AMP there is no need to separate the inbound from the outbound pool.

Provision The DDN and hunt group of the ADM/modem pair are entered in the office data using LD 11. A 500-telephone line card is required to establish the incoming call connection on the analog side (to analog trunk). The number of pooled modems to be supplied is determined according to customer utilization requirements, calculated by using *Meridian data features traffic engineering and configuration* (553-2731-151). Modem pools must be organized according to modem types, i.e., modems of the same speeds and modulation shall be placed in the same pool.

Interaction Assign the analog DN of the modems into the hunt group. (The analog DN is the number assigned to the line card that is connected to the analog end of the modem.) It is possible to configure the inbound modem pool with Ring Again; however, this is not recommended due to the possibility of tying up trunks and time slots.

Dedicated modems

Description This configuration allows dial-up or Hotline access to a voice-grade dedicated facility for outgoing data calls. Each dedicated modem is connected to a stand-alone ADM which is connected to an odd-numbered port on a DLC in a peripheral equipment shelf. The DLC is assigned a DDN which any data station, equipped with an SL-1 set/ADM pair, can dial up for first-come first-served modem access.

The Ring Again queuing feature can also be applied by data callers who encounter a busy modem pool at the time of dialing (see [“Ring Again” on page 42](#)).

Provision The DDN of the ADM/modem pair is entered in the office data using LD 11.

Limitations When an unconditioned voice-grade line facility is used, a data call placed through the modem is limited to a maximum transmission rate as determined by the modem capability or by the limitations of the unconditioned line.

Automated Modem Pooling

Description This feature is only applicable when QMT8 (vintage D11) and higher numbered SADM are used to form the ADM/Modem pair.

With AMP, available as an option in X11 release 5, the ADM/Modem pair information is organized in pool lists that contain similar modems, for speed and other options, to be accessed for use with compatible dataports.

AMP allows access to local and remote data stations using ADM/Modem pairs by a one-step dialing procedure. It is dependent upon the ADM trunk group hunting feature in its selection of modems and dataports.

AMP is able to distinguish between inbound and outbound ringing requirements. Therefore a special MPLC and separate outbound and inbound pools are no longer required.

With AMP, the service changes to pair the ADM and modem together eliminates the VFDN switch and the AUTO DIAL simulation requirements.

Outbound AMP

The Outbound AMP application replaces the manual three-step method of accessing modems with a one-step dialing procedure. Two different dialing procedures are available:

- Prefix dialing method
- Default method

With the Prefix dialing method, the user dials a Modem Selection Prefix of 1 to 4 digits, a trunk access code that is used to route the call and the remote computer DN.

With the default method, it is assumed that the data user normally wishes to connect to the same modem pool for every call. In this case the Modem Selection Prefix is stored against the user's TN and the user only needs to dial the trunk access code and the remote computer DN.

A user may use either method to automatically access and connect the modem. The stored Default Modem Selection Prefix can always be overridden by dialing another Modem Selection Prefix.

If the DTI package is equipped and an all-digital path to the remote computer is available, an All-Digital Connection Prefix can be designated in the Customer Data Block. If this special prefix is used with the Prefix or Default method, a modem is not connected when the outgoing route is digital.

Inbound AMP

The Inbound AMP allows an incoming data call (via DID/Tie trunks) to terminate to a computer port or a data set. If the incoming call is voice frequency and the data port is not analog, an ADM/Modem pair is switched into the connection. If the incoming call is a digital data call, the connection to the computer port is completed without searching for a modem.

Provision When ADMs are used as dataports, they are configured to look like trunk members in an ADM trunk block.

When ADMs are used as data sets, they are configured as SL-1 sets in the TN block. A prompt “DTYP” is used to specify inbound only, outbound only, or combined inbound/outbound.

Keyboard dialing

Description This feature allows Data Terminal Equipment (DTE) to initiate and/or terminate data calls to in-house or remote hosts using the terminal keyboard without the use of a telephone.

Keyboard dialing capability is provided on asynchronous terminals connected to

- co-located asynchronous QMT8
- QMT9 (AIM)
- QMT11 (ASIM)

Provision This feature is supported for ASCII, asynchronous, character mode, interactive terminals equipped with EIA and RS-232-C interface. It is not provided for synchronous or block mode terminals.

Keypad dialing

Description This feature allows the ASIM to initiate and/or terminate asynchronous or synchronous data calls to in-house or remote hosts using the ASIM keypad.

Provision Keypad dialing capability is provided on ASIM terminals with a standard 12-button dial pad that has the digits 0 through 9, plus the * and the #.

Synchronous Data Switching

Description This capability allows synchronous terminals to have switched access to local and remote computers equipped with synchronous ports.

Interaction This feature is supported by the synchronous QMT8, QMT12, ADM, and ASIM.

Hotline

Description This feature is used when a data user always wants to access a particular data station.

Hotline from QMT8 This feature is used with keyboard dialing and is similar to and uses the Automatic Dialing software. Hotline is accessed from the data terminal by

- turning DTE on
- switching DTE from off-line to on-line
- operating the carriage return (CR) key

Hotline from QMT11 If the ASIM and the hotline key are ON, the feature is activated by

- turning the DTE on
- releasing a call and entering a carriage return command
- momentarily depowering the ASIM when the DTE is on

Hotline uses the assigned AUTO-DIAL key.

At a co-located data station, the data DN may be assigned Hotline, while the voice DN may be assigned AUTO-DIAL.

Provision Use LD 11 to assign the feature to an ASIM or a co-located or a stand-alone ADM. It is assigned as ADL in the overlay and to key/lamp pair number three. The ADM or ASIM must be configured for Hotline.

Transparent Data Networking

Description This feature provides a transparent data channel for data modules to perform end-to-end protocol exchange. This means that two data modules will wait for a circuit path to be established before exchanging protocol parameters. The data modules and protocols that are supported by TDN are

- Meridian Communications Adapter (MCA) card in a Meridian Modular telephone (MMT) set. Uses PSDS and T-Link protocols on external calls.
- Meridian Communications Unit (MCU), a stand-alone unit. Uses PSDS and T-Link protocols on external calls.
- Basic Rate Interface (BRI) telephones. Use T-Link, V.110, and V.120 protocols.
- High Speed Data Module (HSDM). When configured to use PSDS.

In X11 release 19, there are three ways to provide a transparent data channel to accommodate data calls from modules using the above end-to-end protocols:

- ESN19 signaling on the private network
- STD signaling on the private network with the STDN option (Standard Signaling TYPE [STYP]=STDN)
- TDN only routes for access to the public network or other vendor PBXs

The TDN feature is an important development for MMT, BRI, and HSDM telephones that use PSDS, T-Link, and other non-proprietary protocols or rate adaption schemes, as it allows calls to be tandemed across a private network before terminating on to a public network. This enables private network users to take maximum advantage of their own network facilities before entering the public network.

Note: A network with all PRI trunks using release 19 or greater has data tandeming capabilities without using ESN19 signaling or TDN routes.

Feature Requirements The TDN feature requires the following:

- QPC720 card in either DTI or PRI mode
- PRI trunks must use either TDN routes or ESN19

Limitations Point-to-point protocols, such as DM-DM, an NT proprietary protocol, are not supported by TDN. Refer to the feature description for a list of data modules and protocols that are supported by TDN.

Refer to *Transparent Data Networking* (553-2731-110) for detailed information on this feature.

Meridian Communications Unit

Description The Meridian Communications Unit (MCU) allows you to transmit and receive data using either PSDS over the public network or a private network. The MCU, which replaces the QMT21C, is designed for domestic and international use, with transmission speeds up to 19.2 Kbps asynch and 64 Kbps synch, integrated display, and self-diagnostics. The MCU supports Autodialing, Ring Again, and Speed Calling, as well as autobauding and automatic parity detection. You can use the MCU for

- Video conferencing
- LAN bridging
- Bulk data/PC file transfer
- Dial back-up
- Host connectivity

The MCU fully complies with RS-232-C and can be configured as DCE or DTE to connect to a terminal, printer, or fax machine.

Unlike the MCA, the MCU provides a dedicated call key and call progress tones. The MCU also permits smart modem pooling.

The MCU supports the DM-DM, T-Link, V.25 bis, and PSDS interfaces, as well as the RS-232-C, CCITT V.35, CCITT V.24, and RS570/RS3449 (with different cables) interfaces. It complies with V.28 for European approval.

Refer to *Meridian Communications Unit and Meridian Communications Adapter description, installation, administration, operation* (553-2731-109) for detailed information on this feature.